

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Please amend claims 1, 4, 8, 12, 16-19, 22, 24, 27 and 35, add new claim 49 and replace the pending claims with the following:

1. (Currently amended). A method of inhibiting the infectivity of HIV, said method comprising the steps of:
 - (a) contacting an HIV virion with an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~a composition comprising a serpin, or a fragment thereof~~; and
 - (b) incubating said virion with said antithrombin ~~serpin, or fragment thereof~~, for a period of time sufficient to inhibit the infectivity of HIV.
- 2-3. (Canceled).
4. (Currently amended). The method of claim 1, wherein said antithrombin ~~serpin~~ is bovine-originated or human-originated.
- 5-7. (Canceled).
8. (Currently amended). A method of decreasing the infectivity of HIV, if any is present, in a biological sample, the method comprising the steps of:
 - (a) identifying a biological sample in which a decrease or elimination of HIV infectivity is desirable; and
 - (b) contacting the biological sample with an amount of an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~serpin, or fragment thereof~~, sufficient to decrease the infectivity of HIV in the biological sample.
9. (Canceled).

10. (Original) The method of claim 8, wherein said biological sample is selected from a group consisting of blood, plasma, serum, saliva, semen, cervical secretions, urine, breast milk, and amniotic fluids.
11. (Canceled).
12. (Currently amended). The method of claim 8, wherein said antithrombin ~~serpin~~ is bovine-originated or human-originated.
- 13-15. (Canceled).
16. (Currently amended). The method of claim 8, wherein the amount of said antithrombin ~~serpin~~ is at least about 2 units per milliliter of the biological sample volume.
17. (Currently amended) The method of claim 8, wherein the amount of said antithrombin ~~serpin~~ is at least about 5 units per milliliter of the biological sample volume.
18. (Currently amended) The method of claim 8, wherein the amount of said antithrombin ~~serpin~~ is at least about 10 units per milliliter of the biological sample volume.
19. (Currently amended). A method of treating HIV infection, the method comprising introducing into a cell susceptible to HIV infection a DNA molecule encoding an antithrombin a serpin, or fragment thereof, and expressing said antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~serpin, or fragment thereof~~, and in an amount sufficient to inhibit infection of the cell by the HIV.
- 20-21. (Canceled).

22. (Currently amended). The method of claim 19, wherein said DNA encodes an antithrombin ~~a serpin~~ that is bovine-originated or human-originated.
23. (Canceled).
24. (Currently amended) A method of treating HIV infection in a subject, the method comprising introducing into the subject a producer cell that expresses an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~a serpin, or fragment thereof~~, in an amount sufficient to inhibit infection of an endogenous cell of the subject, the endogenous cell being susceptible to HIV infection.
- 25-26. (Canceled).
27. (Currently amended) The method of claim 24, wherein said antithrombin ~~serpin~~ is bovine-originated or human-originated.
- 28-34. (Canceled).
35. (Currently amended) A method of inhibiting the infectivity of HIV, said method comprising the steps of:
- (a) contacting an HIV virion with a composition having a surface which comprises an antithrombin selected from the group consisting of 43 kDa modified antithrombin, R-antithrombin, S-antithrombin, pre-latent antithrombin, a variant thereof, an analog thereof and a combination thereof ~~substantially purified serpin, or fragment thereof~~, associated with said surface; and
 - (b) incubating said HIV virion with said antithrombin ~~serpin~~ for a period of time sufficient to inhibit the infectivity of HIV.
- 36-48. (Canceled).

49. (Newly added). A method of inhibiting the infectivity of HIV, said method comprising the steps of:

(a) contacting an HIV virion with antithrombin III bound to heparin; and

(b) incubating said virion with said antithrombin for a period of time sufficient to inhibit the infectivity of HIV.